

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars.

1. Election

The applicants hereby affirm the election of group I, claims 1-26, drawn to a product, for prosecution on the merits and acknowledge the withdrawal of claims 27-47 from further consideration. The applicants hereby reserve all rights to the non-elected subject matter.

The applicants hereby respectfully request rejoinder of the process claims upon allowance of the product claims.

2. Declaration

A newly executed supplemental declaration listing the filing date of the German Foreign Priority Document 10305614.9 in standard U.S. format is enclosed herewith. Indication of acceptance of the supplemental declaration is respectfully requested in the next Office communication.

3. In the specification

A. Specification amendment

The specification is amended, as shown in the foregoing AMENDMENT TO THE SPECIFICATION, to replace the abstract to correct the noted minor informality. It is respectfully submitted that no new matter is added, as the changes simply correct minor informalities.

Entry of the AMENDMENT TO THE SPECIFICATION is respectfully requested in the next Office communication.

B. Objection to the specification

Reconsideration and removal of the objection to the specification is respectfully requested, in view of the amendment to the abstract, on the basis that the noted minor informality has been corrected.

Accordingly, removal of this objection is respectfully requested.

4. In the claims

As shown in the foregoing LIST OF CURRENT CLAIMS, the claims have been amended to more clearly point out the subject matter for which protection is sought.

A. Claim amendments

Claim 1 is amended to clarify that the first lower one of the lacquer layers is formed by a physically drying liquid lacquer layer, which becomes solid by drying out a carrier fluid. It is respectfully submitted that no new matter is added, since support for the amendments may be found, for example, at least in paragraphs [0007], [0011], [0014], [0029], [0034], [0037], [0047], and [0056] of the accompanying description in the specification as originally filed and a person having ordinary skill in the art at the time the invention was made would understand the processes involved in physically drying a liquid lacquer layer.

Claim 4 is amended to require that the lower lacquer layer is elastic so as to at least avoid cracks from forming therein through mechanical motions. It is respectfully submitted that no new matter is added, since support for the amendments may be found, for example, at least in paragraph [0014] of the accompanying description in the specification as originally filed.

Claim 9 is amended to correct a minor informality.

Claim 12 is amended to remove the recitation of the word "sound."

Claim 16 is canceled.

Claims 19 and 20 are amended to recite only the broader of the two ranges recited.

Claim 23 is amended to correct a minor informality to depend from claim 22 instead of claim 21.

Claim 24 is amended to clarify that the protective layer is applied to the entirety of the flat substrate.

Claims 27, 30, 32, 35, and 44 are amended similarly to corresponding claims discussed above.

Claims 2, 3, 5-8, 10, 11, 13-15, 17, 18, 21, 22, 25, 26, 28, 29, 31, 33, 34, 36-43, and 45-47 are left unchanged

Claims 27-47 are withdrawn from further consideration.

Entry of the LIST OF CURRENT CLAIMS is respectfully requested in the next Office communication.

B. Rejection of claims 1-26 under 35 U.S.C. § 112 second paragraph

Reconsideration of this rejection is respectfully requested, in view of the amendments to the claims and the discussion below, on the basis that claims 1-26 are clear and definite.

With regard to the recitation of a “flat substrate” in claim 1, it is respectfully submitted that this term is clear and definite to a person having ordinary skill in the art at the time the invention was made. The recitation of a “flat substrate” only requires an object having at least one flat (or substantially planar) surface. The rest of the object can take any form, for example a sheet form, or any other form, so long as at least one flat (or substantially planar) surface is provided. This interpretation of “flat substrate” is consistent with the specification and drawing figures.

The recitation of a “flat substrate” does not exclude a flat sheet. However, the fact that the recitation of a “flat substrate” may cover many differently shaped objects that have at least one flat (or substantially planar) surface does not render the claim indefinite. Instead, this is simply breadth of scope, not to be confused with indeterminate scope.

Accordingly, it is respectfully submitted that the recitation of a “flat substrate” in claim 1 is clear and definite to a person having ordinary skill in the art at the time the invention was made, and withdrawal of this rejection is respectfully requested.

With respect to the recitation in claim 1 of a “physically drying lacquer layer,” claim 1 has been amended to further clarify this recitation. It is respectfully submitted

that all of the possibilities of physical drying listed on page 5 of the Office action are covered by the recitation of a “physically drying lacquer layer.” Again, the Office action appears to be confusing breadth of scope with indefinite scope. However, for the sake of clarity, claim 1 now recites that the first lower one of the lacquer layers is formed by a physically drying liquid lacquer layer, which becomes solid by drying out a carrier fluid. It is respectfully submitted that a person having ordinary skill in the art at the time the invention was made would understand what is recited by this claim.

In particular, a person having ordinary skill in the art at the time the invention was made would understand that the term “physically drying” relates to drying, in this case a liquid lacquer layer, which becomes solid by drying out a carrier fluid, without any cross-linking or alteration of the chemical formulation of the lacquer layer, such as, for example, UV radiation, or other treatments.

Thus, it is respectfully submitted that a person having ordinary skill in the art at the time the invention was made would understand what is recited in amended claim 1. Accordingly, it is respectfully submitted that amended claim 1 is clear and definite, and withdrawal of this rejection is respectfully requested.

Turning to claim 4, the claim has been amended to provide further requirements on the recitation of “elasticity.” In particular, claim 4 is amended to require sufficient elasticity so as to at least avoid cracks from forming therein through mechanical motions.

It is respectfully submitted that a person having ordinary skill in the art at the time the invention was made would understand what degree of elasticity is required by the recitation of amended claim 4. Accordingly, withdrawal of this rejection is respectfully requested.

With regard to claim 9, the minor informality has been corrected to provide antecedent basis for all recited elements. Accordingly, withdrawal of this rejection is respectfully requested.

With regard to claim 12, the noted recitation “sound” has been deleted from the claim. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 16 has been canceled. Therefore, withdrawal of this rejection is respectfully requested.

With respect to claims 19 and 20, the narrower range has been deleted from the claims. Accordingly, withdrawal of this rejection is respectfully requested.

Turning to claim 23, the claim has been amended to depend from claim 22, which provides proper antecedent basis for the recitation of a "gap" in claim 23. Accordingly, withdrawal of this rejection is respectfully requested.

With regard to claim 24, the claim has been amended to clarify that the protective layer is applied to the entirety of the flat substrate. It is respectfully submitted that a person having ordinary skill in the art at the time the invention was made would understand that the protective layer recited in claim 24 is to be applied to the entirety of the flat substrate, as opposed to being applied to just certain portions of the flat substrate. Accordingly, withdrawal of this rejection is respectfully requested.

5. Rejection of claims 1, 3, 8, 9, 13, 15, 17, 21, 24, and 26 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*)

Reconsideration of this rejection is respectfully requested, in view of the amendments to claim 1, on the basis that the *Kaule* patent fails to disclose each and every recited element of amended claim 1, and on the basis that the rejection fails to establish a *prima facie* case of obviousness with respect to amended claim 1. The remaining claims depend from claim 1, and are therefore patentable as containing all of the recited elements of claim 1, as well as for their respective recited features.

By way of review, amended claim 1 requires a security paper for producing value documents that includes a flat substrate provided at least partly with a dirt-repellent protective layer for extending the life time and fitness for circulation. The protective layer includes at least two lacquer layers, a first lower layer formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, applied to the substrate which makes contact with the substrate therebelow and

closes its pores, and a second upper layer protecting the substrate from physical and chemical influences.

The recitation in amended claim 1 a first lower layer formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid requires that only physical processes take place to achieve the dried layer. This recitation excludes lacquer layers that include crosslinking agents or lacquer layers that are dried using treatments that include a chemical reaction. It is recognized that all of the possibilities of physical drying listed in the Office action on page 5 are encompassed by the recitation in claim 1. In particular, it is recognized that physical drying can be accelerated by heating, for example, with a hot-air blower and/or an infrared emitter (see specification paragraph [0029]).

As discussed in paragraph [0008] of the specification as originally filed, it is desirable to provide a security paper having a long lifetime due to good dirt repellence and a high resistance to the penetration of liquid. This is achieved in accordance with amended claim 1 by the recited two-layer coating having a lower layer which closes, in a first step, depressions, uneven areas and pores of the substrate. As recited in amended claim 1, the lower lacquer layer is formed by a physically drying lacquer layer, since physically drying lacquer layers do not include reactive components which can remain in the substrate after drying, as is the case with reactive lacquer layers (specification paragraphs [0011], [0012]). Thus, the disadvantages of the reactive components of reactive lacquer layers penetrating into the substrate, and thus, the incomplete curing of such a reactive lacquer layer, can be avoided (specification paragraphs [0011], [0012]).

The advantages of using a reactive lacquer layer can be achieved, however, by using the recited physically drying lacquer which closes depressions, uneven areas and pores of the substrate, so that when the second lacquer layer is applied over the first lacquer layer, any reactive components of a reactive lacquer layer do not penetrate into the substrate, and thus, complete curing of such a reactive lacquer layer can be achieved.

Turning to the *Kaule* patent, it is respectfully submitted that the *Kaule* patent fails to disclose at least a first lower layer formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, as is required by amended claim 1.

Further, it is respectfully submitted that a person having ordinary skill in the art at the time the invention was made would not have replaced the lower layer of the *Kaule* patent with a first lower layer formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, as is required by amended claim 1.

The *Kaule* patent discloses a security document having a multi-layer security element having a diffraction structure in the form of a relief structure (abstract). The security element consists of at least two reaction lacquer layers with the diffraction structure disposed therebetween (claim 1; abstract). The terms "reaction lacquer" and "reaction adhesive" are defined in the *Kaule* patent as lacquers or adhesives that cure, i.e. polymerize or cross-link, irreversibly under specific physical or chemical action (col. 3, lines 53-58). Exemplary lacquers and adhesives are UV-curable and two-component lacquers and adhesives (col. 3, lines 58-60).

As further disclosed in the *Kaule* patent, the lower layer 4 consists of a material that is largely homogenous chemically with the upper layer 2, which is a UV-curable or chemically curable reaction lacquer (col. 4, lines 22-29). Thus, it is clear that the lower layer 4 of the *Kaule* patent cannot be considered a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, as is required by amended claim 1.

Thus, it is respectfully submitted that the *Kaule* patent fails to disclose every feature of amended claim 1, in particular, a first lower layer formed by a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid. Accordingly, withdrawal of this rejection is respectfully requested.

Further, the *Kaule* patent specifically discloses that the lower layer 4 and the upper layer 2 are largely homogenous chemically, in order to provide a very firm compound in areas where the metal layer contains pores or microcracks, and since the

UV-curable or chemically curable layers are irreversibly cured, it is impossible to detach the layers later.

Thus, a person having ordinary skill in the art at the time the invention was made would not have substituted a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid for the UV-curable or chemically curable reaction lacquer or adhesive that forms the lower layer 4 of the *Kaule* patent, since such a substitution would defeat the intended purpose of using the homogenous chemically same lower upper layers 4, 2 of the *Kaule* patent.

Accordingly, since a person having ordinary skill in the art at the time the invention was made would not have substituted a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, for the UV-curable or chemically curable reaction lacquer or adhesive that forms the lower layer 4 of the *Kaule* patent, a *prima facie* case of obviousness with respect to amended claim 1 cannot be established. Therefore, withdrawal of this rejection is respectfully requested.

As mentioned above, applicants submit that independent claim 1 is patentable and therefore, claims 3, 8, 9, 13, 15, 17, 21, 24, and 26, which depend from claim 1, are also considered to be patentable as containing all of the elements of claim 1, as well as for their respective recited features.

6. Rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*) in view of U.S. patent no. 5,928,471 (*Howland et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Howland* patent fails to provide for the deficiencies of the *Kaule* patent, as discussed in detail above with respect to claim 1, from which claim 2 depends.

Accordingly, withdrawal of this rejection is respectfully requested.

7. Rejection of claims 4-11, 14, and 18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*) in view of U.S. patent no. 5,141,983 (*Hasegawa et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Hasegawa* patent fails to provide for the deficiencies of the *Kaule* patent, as discussed in detail above with respect to claim 1, from which claims 4-11, 14, and 18 depend.

In particular, the *Hasegawa* patent discloses compositions wherein when a film is obtained by coating the composition on a substrate and the coating is allowed to dry, a bond forms between components of the composition (claims 1 and 2; col. 2, lines 12-16; col. 3, lines 21-27; col. 6, lines 41-43).

Thus, the *Hasegawa* patent fails to disclose a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, as required by amended claim 1, from which claims 4-11, 14, and 18 depend.

Accordingly, a *prima facie* case of obviousness with respect to amended claim 1, from which claims 4-11, 14, and 18 depend cannot be established, and withdrawal of this rejection is respectfully requested.

Further, the coatings disclosed in the *Hasegawa* patent are intended to be used as a sole protective layer, and not as a lower part of a double protective layer. In view of the disclosure of the *Hasegawa* patent (col. 1, lines 13-19; col. 6, lines 50-58), which suggests that the sole coating layer of the *Hasegawa* patent sufficiently protects the coated substrate, a person having ordinary skill in the art would not have covered the coating of the *Hasegawa* patent with an additional protective layer to obtain a double protective layer, as is required by amended claim 1.

Accordingly, a *prima facie* case of obviousness with respect to amended claim 1, from which claims 4-11, 14, and 18 depend cannot be established, and withdrawal of this rejection is respectfully requested.

8. Rejection of claims 12, 19, and 20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*) in view of U.S. patent no. 6,715,750 (*Gerlier et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Gerlier* patent fails to provide for the deficiencies of the *Kaule* patent, as discussed in detail above with respect to claim 1, from which claims 12, 19, and 20 depend.

Accordingly, withdrawal of this rejection is respectfully requested.

9. Rejection of claim 25 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*) in view of U.S. patent no. 4,462,866 (*Tooth et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Tooth* patent fails to provide for the deficiencies of the *Kaule* patent, as discussed in detail above with respect to claim 1, from which claim 25 depends.

In particular, while the *Tooth* patent discloses an overlay on a sheet which may be a liquid solution of a polymer which forms a film upon evaporation of solvent (col. 3, lines 53-54), as discussed in detail above, a person having ordinary skill in the art at the time the invention was made would not have substituted a physically drying liquid lacquer layer, which becomes a solid by drying out a carrier fluid, for the UV-curable or chemically curable reaction lacquer or adhesive that forms the lower layer 4 of the *Kaule* patent, for the reasons discussed above.

Therefore, a person having ordinary skill in the art at the time the invention was made would not have substituted the overlay of the *Tooth* patent for the UV-curable or chemically curable reaction lacquer or adhesive that forms the lower layer 4 of the *Kaule* patent, and thus, a *prima facie* case of obviousness with respect to amended claim 1, from which claim 25 depends, cannot be established. Therefore, withdrawal of this rejection is respectfully requested.

10. Rejection of claims 22 and 23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,820,971 (*Kaule et al.*) in view of U.S. patent no. 6,059,914 (*Suss*) and further in view of U.S. patent no. 4,462,866 (*Tooth et al.*)

Reconsideration of this rejection is respectfully requested on the basis that the *Suss* and *Tooth* patents fail to provide for the deficiencies of the *Kaule* patent, as discussed in detail above with respect to claim 1, from which claims 22 and 23 depend.

Accordingly, withdrawal of this rejection is respectfully requested.

11. Conclusion

As a result of the amendment to the claims, and further in view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is respectfully requested that every pending claim in the present application be allowed and the application be passed to issue.

Please charge any additional fees required or credit any overpayments in connection with this paper to Deposit Account No. 02-0200.

If any issues remain that may be resolved by a telephone or facsimile communication with the applicants' attorney, the examiner is invited to contact the undersigned at the numbers shown below.

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Respectfully submitted,

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